

## ABSTRACT OF THE DISCLOSURE

A polishing head for use in an apparatus for chemically-mechanically polishing semiconductor wafers is provided. The polishing head includes a first side having at least a portion thereof operably connectable with a spindle on the apparatus, and a second side opposite the first side, the second side having a substantially spherical cap shape comprising an outer region adapted to apply a first force onto a semiconductor wafer against a polishing pad, and an inner region adapted to apply a second force onto the semiconductor wafer against the polishing pad, the second force being different from the first force, whereby the first force and the second force cause the polishing pad to planarize the semiconductor wafer substantially uniformly. A method of polishing semiconductor wafers is also provided.

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